Chapter Six

The Contributions of Community and Non-Profit Organizations

- **Two Tools for Communities**
- **Community Issues and Initiatives**
- **National Non-Profit Organizations**
- **Guest Comments:**

  Paul Orum, Working Group on Community Right-to-Know

  Mary Rosso, Maryland Waste Coalition

  Naomi Friedman, National Association of Counties, and

  Karen Troccoli, National Association of County and City Health Officials

Introduction

In the past, the phrase "pollution prevention" has been most closely associated with industrial processes, so much so that many have been led to believe that pollution prevention is exclusively an industrial matter. Indeed, community involvement in pollution prevention has primarily been in an industrial context. For example, communities have worked with facilities to get them to lower their emissions of toxic substances and prevent risk.

But just as pollution is not solely the fault of industry, preventing pollution is not solely the responsibility of industry. In 1990, EPA's Science Advisory Board (SAB) published "Reducing Risk," a report which advised the Agency on how to prioritize efforts to address the most serious risks to human health and the environment. One of the challenges the SAB acknowledged is the diverse sources of pollution:

> "Action by individuals regarding where to live and work, what products to buy, and what activities to pursue have collective impacts on local, regional and global environmental systems. Most large point sources of pollution have now been addressed. The remaining sources of pollution resulting from *general economic activity and lifestyle decisions* are numerous and now are major contributors to many environmental problems. In total, they are causing unprecedented changes to the biosphere."[1] [emphasis added]

Problems resulting from dispersed sources of pollution (for example, automobile emissions or run-off from cities, suburbs and agricultural lands) are more difficult to control with traditional "end of pipe" measures than are large, industrial sources of pollution. Moreover, the resources of a given place — air, water, land, and living organisms (plants and animals) — need to be treated as inter-connected parts of a system. And finally, not all parts of the country have the same problems or need the same kind of solutions. EPA's approach to the challenges facing communities — called Community-Based Environmental Protection (CBEP)[2] — is to assess and manage the quality of air, water, land, and living resources in a place as a whole, to reflect regional and local conditions, and to work with public and private partners in environmental protection. In addition, innovative approaches in applying pollution prevention solutions to the problems faced by minority and low income communities have been supported by EPA's Environmental Justice through Pollution Prevention (EJP2) grants program, an initiative of Administrator Carol Browner. Since 1995, EPA has awarded nearly 100 EJP2 grants, primarily to non-profit organizations and tribes.

Pollution prevention can be most meaningful to communities when it is viewed as a strategy for pursuing sustainable development. In order to achieve sustainability, productivity, jobs, profits, information, and education must grow, while pollution,

> "It is within communities that people can most easily bring diverse interests together, identify and agree on goals for positive change and organize for responsive action . . . Local communities offer people the greatest opportunity to meet face to face to fashion a shared commitment to a sustainable future."
>
> -- The President's Council on Sustainable Development

[1] EPA. *Reducing Risk: Setting Priorities and Strategies for Environmental Protection.* (SAB-EC-90-021, September 1990).

[2] EPA's homepage. "www.epa.gov"

waste, poverty, and energy use and natural resource consumption must decrease. Pollution prevention strategies at the community level can be enhanced by integration with environmental planning and management approaches that emphasize integration of social, economic, and environmental factors.

This chapter examines two influential forces in the progress of prevention in the United States — activities of communities and non-profit organizations. The first part of this chapter examines a number of issues facing communities for which pollution prevention provides a constructive and promising set of solutions. They include issues of transportation and land use, local economic self-sufficiency, and building design/indoor air quality. A concluding section of this chapter reviews the important role played by national non-profit organizations in advancing the cause of pollution prevention.

Two Tools for Communities

"Think Globally, Act Locally," a popular bumper sticker reads. How should we "act locally?" How do communities with diverse environmental problems know where to start?

Community Partnerships for Environmental Action

In conjunction with EPA, the Maryland Department of the Environment, Baltimore and Anne Arundel County are now participating in a new initiative to develop a partnership with local neighborhoods and businesses to pilot a community-based approach to environmental protection. The project is designed to achieve the following:

- Address environmental issues from the perspective of the neighborhood.
- Develop a detailed environmental/risk profile using information from all partners. This approach allows for the consideration of information often missed when policy is made at the national or state level.
- Empower the community to take the lead in the decisions affecting their environment.
- Allow communities to develop pollution prevention approaches that go beyond current statutory requirements.
- Set an environmental action agenda based upon the needs and wants of the

Community-based initiatives have a variety of tools with which to identify environmental problems and potential solutions. Two of these, community risk profiles (CRPs) and visioning, are described here.

The Rockefeller University recently proposed that communities use CRP as a tool to improve environment and community health.[3] Unlike a comparative risk assessment, a CRP does not rank risks but rather provides a method to determine how best to serve the needs of a community. The Rockefeller University recently published a case study on how a CRP might be conducted for the Silicon Valley area of California, rejecting the idea that environmental health risks can actually be numerically ranked. The proposed goal of the CRP for Silicon Valley, which would be developed by a community task

[3] The Rockefeller University. *Community Risk Profiles: A Tool to Improve Environment and Community Health*, prepared for the Robert Wood Johnson Foundation (April 1995).

force representing an ethnically and socially diverse cross section of community leaders, is not to determine which risks are the most important, but to provide a tool to make it easier for decision-makers to consider specific courses of action. Decision-makers will have other non-environmental factors to consider when deciding how to address these environmental issues, including the values of the community, economic forecasts, and social and economic priorities of the community.

The Silicon Valley task force might list environmental hazards it is concerned about — agricultural chemicals, automotive air pollution, and fireplace smoke might be three such hazards. The task force would then evaluate these hazards based on criteria such as how toxic the pollutant is to specific exposed populations, what type of health risks are involved, what type of ecological risks are involved, what kind of economic impacts possible resolutions to the environmental problem would entail, and general quality of life issues. CRPs provide a transparent, systematic method for evaluating the environmental concerns of a community so that whatever program the community develops has a solid base of support.

Another way to build a strong foundation for a community project is to use a "visioning" process.

Another way to build a strong foundation for a community project is to use a "visioning" process. This process is a public participation strategy that allows an entire community to develop a shared "vision" for their community's future. The process is characterized by a high level of community participation, within a series of open, inclusive public meetings. Through this collaborative process, the community agrees to mutual values and goals. These goals then become the guiding force for changes in the environment, transportation, economic development, education, recreation, etc. The visioning process is a tool to help further community sustainability, yielding an improvement in the community's overall quality of life. The consensus-building approach of a visioning process often ensures smoother implementation and more effective long-term results.

Chattanooga, Tennessee employed this visioning process very successfully. Using this process, Chattanooga went from being named the "worst polluted city in America" in which cars often needed to use headlights during daylight hours in order to see through the heavily-polluted air, to a clean, healthy area which proudly markets itself as an "environmental city" because of its attention to quality of life issues like increased parkland and a revitalization of the historic downtown area.[4]

In addition to CRPs and visioning, communities can make use of a broad range of ecosystem tools (e.g., ecological risk methodology, ecological assessments, GIS modeling programs, etc.) social tools (e.g., community profiling methods), and economic tools (e.g., "build out" scenarios, ecosystem benefit identification methods, etc). Many specific tools can be found at one of EPA's web sites (http://www.epa.gov/ecocommunity/).

[4] The President's Council on Sustainable Development. Sustainable America: A New Consensus for Prosperity, Opportunity, and a Healthy Environment. (February 1996.)

Community Issues and Initiatives

Prevention in the Transportation Sector

Cars are by far the most popular way of getting from one place to another in the United States. As of 1993, there were an estimated 196.8 million cars in the country -- approximately one for every eligible driver in the country.[5] This proliferation of car ownership has brought tremendous freedom of movement, as well as tremendous pollution. Since passage of the Clean Air Act in 1970, federal emission control policies have become progressively more stringent. These efforts have greatly reduced typical vehicle emissions; however, in those same years, the number of miles driven has more than doubled. The increase in travel has offset much of the emission control progress.

The effects of cars on the environment extends beyond air pollution to larger issues of land use, urban sprawl, and the degradation of watersheds and remaining underdeveloped areas, as well as hazardous waste management issues related to the disposal of used motor oil, antifreeze, and batteries. One EPA report noted:

> "Emissions from an individual car are generally low, relative to the smokestack image many people associate with air pollution. But in numerous cities across the country, the personal automobile is the single biggest polluter, as emissions from millions of vehicles on the road add up. Driving a private car is probably a typical citizen's most polluting daily activity."[6]

Transportation problems are complex, involving federal and state policies and funding mechanisms, environmental quality and safety, economic issues relating to congestion and mobility, and local land use and development concerns.

Below are some interesting, diverse examples of how local governments and/or community organizations have found preventive solutions to transportation and land use issues. These examples also illustrate the variety of local organizations that are involved in the transportation planning process (e.g., cities, school boards, non-profit organizations, etc.).

- **The Tri-State Transportation Campaign is a non-profit corporation that strives to reform transportation systems and policies in the 32-county New York/New Jersey/Connecticut region.** The Campaign engages the region's transportation agencies in policy level dialogue and works to influence planning in project areas critical to the region's transportation future. The Campaign's 1996 project agenda focuses on five issues: pedestrian advocacy, sound land redevelopment strategies, alternative fuel bus fleets, mass transit defense, and highway expansion alternatives.[7]

---

[5] National Safety Council (Department of Transportation) statistic (number of registered vehicles in 1993).

[6] EPA, Office of Mobile Sources. *Automobile Emissions: An Overview* (EPA 400-F-92-007, August 1994).

- **After two years of research and development, the Southeast Community Development Corporation, a unique alliance of eight southeast Los Angeles County cities, will soon launch the Smart Shuttle** SCDC aims to enhance commercial and manufacturing districts, increase employment and training opportunities, and regional economic growth. The Smart Shuttle is the first Los Angeles alternative fuel advanced communication technology shuttle founded by a community-based organization. The idea is to develop a mode of public transportation that will get commuters out of their cars, while providing easy connections with the Metro rail systems. The shuttle's advanced communication programming capability will allow it to selectively route itself to provide efficient, prompt, and flexible service. By avoiding heavily congested highways and reducing the amount of cars on the highways, the Smart Shuttle will help Southern Californians reduce air pollutant emissions.

- **The goal of the Land Use, Transportation, Air Quality Connection Program, which was initiated by 1000 Friends of Oregon (a non-profit public service organization), was to develop viable alternatives to a proposed highway bypass in Portland, Oregon.** By 1995, LUTRAQ succeeded in convincing the Oregon Department of Transportation (ODOT) to scrap plans for the bypass and replace it with a plan which consisted of light rail transit, high-frequency bus service and walking/biking facilities. ODOT concluded the LUTRAQ plan had the least negative environmental and social impacts of all the proposed alternatives, and incorporated it into the region's 50-year land use and transportation plan.[8]

- **EPA's Transportation Partners Program promotes and supports voluntary local programs (like those mentioned above) that reduce greenhouse gas emissions from the transportation sector by improving transportation choices and efficiency.**[9] The program concentrates on three major areas: 1) community design which makes it easier to walk, bike, or take transit; 2) market incentives that reduce congestion such as discounted off-peak tools, reducing parking subsidies, and encouraging private transit services; and 3) technology applications that take advantage of cutting edge technologies such as telecommuting and enhanced and flexible transportation services. The first annual Transportation Partners' *Way to Go!* awards were presented to eight organizations in September 1996.

- **Cincinnati, Ohio is committed to "greening" its own road maintenance program.** The Department of Public Works/Highway Maintenance Division and Parking Facilities Division converted to lead-free, waterborne paint for

[7] Tri-State Transportation Campaign Homepage (http://www.tstc.org/tstc/)

[8] EPA. Way to Go! Awards Summary. p. 6.

[9] EPA. *Smart Moves for Healthier Communities* [brochure], (EPA 230-F-96-003, August 1996).

yellow and white highway as well as parking lot line striping instead of leaded, solvent-based paint. The paint conversion is an example of avoiding costs associated with media- and chemical-specific regulations. The switch from high-VOC solvent-based paints avoids the stricter federal regulations anticipated in the near future. Cincinnati is clearly ahead of the game in this situation and is already benefiting from cost savings, reduced employee exposure, and a cleaner environment. Based on an annual use of 22,000 gallons of line stripe paint, approximately 33,000 pounds of lead and 36,000 pounds of VOCs are being eliminated from Cincinnati's environment each year through this conversion.[10]

Integrating Prevention with Land Use, Economic Development, and Environmental Justice

For many communities faced with a dwindling industrial base, disadvantaged communities, abandoned commercial facilities, and a variety of other economic travails, pollution prevention offers the possibility of building sustainable and self-sufficient economic communities while improving the ways in which land and other natural resources are used and developed.

Eco-Industrial Parks. One emerging concept is the development of eco-industrial parks (EIPs), which link a variety of manufacturing and service businesses into an "industrial ecosystem." These parks embody ecological principles to achieve the most beneficial, least damaging interaction with the environment. By integrating all aspects of environmental management into one site, an eco-industrial park offers a system where the consumption of energy/materials is optimized, waste generation is minimized, and byproducts of one process serve as the raw material for another process.

Northampton County, Virginia's *Sustainable Development Action Strategy*.

In response to severe economic conditions, Northampton County designed an aggressive plan of action, the *Sustainable Development Action Strategy*, to simultaneously invest and protect its natural resources and cultural assets to build a strong and lasting economy that will benefit all of its people. The County's commitment and accomplishments have earned national recognition as a model for the real and lasting development of communities across America. The Strategy consists of a coordinated program of specific achievable objectives, each of which is simultaneously an economic development action and a resource protection action. The Strategy targets six industry areas with immediate and ongoing potential to provide quality job and business opportunities. Each of these industries depends on one or more fundamental vital assets for its initial development and ongoing success, as follows: agriculture/productive land; seafood and aquaculture/clean water; heritage tourism/preserved natural and cultural resources; arts, crafts, and local products/culturally-diverse and authentic community; research and education/intact natural and cultural systems; and new industry/sense of place, quality of life, fresh water. The Northampton County *Sustainable Development Action Strategy* has been characterized by the community as being good for business, good for the environment, and good for all of its people.

[10] The City of Cincinnati's Pollution Prevention Program. (September 30, 1996).

Environmental benefits of EIPs include lower pollution emissions from facilities, conservation of natural resources, and fewer threats to public health. EIPs also provide an opportunity to demonstrate innovative approaches to pollution prevention, energy efficiency, resource recovery, product disassembly, and other advanced environmental technologies.

EPA is encouraging local participation in the development of EIPs, since the needs and environmental protection issues for each park will be unique. Chattanooga, Pittsburgh, and Baltimore are three cities that are working hard to develop successful EIPs that are tailored to their local needs. By encouraging community participation and involvement in the development and operation of the EIP, companies can build public support and demonstrate their commitment to environmental protection.

The border community of Brownsville, Texas, is working to expand the definition of EIP to include the whole community. Brownsville and its sister city of Matamoros (Mexico), are negotiating how to plan and execute a EIP that benefits both communities and properly uses the concept of EIPs to gain full environmental benefits.

While EIPs are an exciting concept, implementation at the community level is just beginning and will take some time to develop. During the interval, however, communities are benefiting greatly from more targeted pollution prevention programs aimed at specific problems.

Brownfields. Land use and economic development come together in the problem of "brownfields" — abandoned, idled, or under-used industrial and commercial facilities where redevelopment or expansion is complicated by real or perceived environmental contamination. EPA has launched a Brownfields Initiative to empower states and communities to prevent, assess, clean up, and sustainably reuse brownfields, with the goals of a cleaner environment, new jobs and tax base, and preservation of undeveloped, forested "greenfields."

Environmental Justice. Another area where pollution prevention is being integrated into economic development issues is in "environmental justice" communities. EPA's environmental justice program was developed in response to a 1992 study[11] that found that people of color and low-income communities experience higher exposure to toxic pollutants than the general population. For example, most hazardous waste treatment and disposal sites are located in poor and minority neighborhoods. Because many such communities face disproportionate environmental impacts, local pollution prevention programs can help eliminate the need for current and future treatment and disposal systems, while in some cases producing jobs and sustainable businesses.

EPA's EJP2 grants program supports local environmental, environmental justice, community grassroots organizations, and tribal governments that promote environmental justice using pollution prevention as the preferred approach, as well as national and

"Communities of color and low income Americans seek not to redistribute pollution from dirtier and overexposed areas to cleaner and underexposed areas. They, instead, seek to prevent pollution at the source so that all Americans can breathe clean air, drink clean water, and eat clean food."

– Representative John Conyers

[11] This study is described in INFORM's *Toxics Watch 1995*.

regional organizations that partner with such groups. Following are some examples of projects that have been funded over the last two years:[12]

- WE ACT/Natural Resources Defense Council received an EJP2 grant of $200,000 to assist Northern Manhattan communities that are disproportionately impacted by excess levels of airborne particulate matter and toxins from multiple sources. The grant will address air pollution from buses and trucks, air pollution and improper waste disposal by dry cleaning operations, the lack of accurate commercial and industrial sites information, and keeping brownfields clean through pollution prevention. The proposal includes four program initiatives: 1) Uptown Diesel Bus Initiative; 2) Dry Cleaning Initiative; 3) Commercial and Industrial Sites Audit; and 4) Keeping Brownfields Clean Initiative.

- Citizens for a Better Environment (CBE) won a $148,987 EJP2 grant. The regional non-profit organization plans to use the grant funding to provide much needed technical and financial support to local grassroots organizations as they work to foster pollution prevention in their communities in Chicago, Milwaukee, and Minneapolis. All of the neighborhood CBEs will be focusing on communities of color with the majority of their residents living in low-income households. Project activities will include: providing technical assistance to at least two local organizations in Southeast Chicago to establish good neighbor dialogues with polluting businesses; work with four partners to foster model pollution prevention efforts among auto repair and metal fabricating businesses on Milwaukee's south side; and work with the Hawthorne community of Minneapolis, a low-income neighborhood to engage in permit monitoring of neighborhood facilities, and the establishment of Good Neighborhood Dialogues between residents and businesses.

- In EPA Region I, a coalescing of environmental justice projects is occurring in Boston, focused on the increasing hazards posed by small automotive shops located in low-income neighborhoods. Health centers in these neighborhoods have reported startling incidences of accidental direct and indirect exposure of the public to local automotive shop toxins. The Bowdoin Street Health Center received $53,450 to add a Certified Industrial Hygienist to the community health center's occupational health clinic. The industrial hygienist will help small area automotive repair/bodyshops and dry cleaning businesses comply with all regulations and decrease the amount of hazardous and toxic substances they use. The Department of Health and Hospitals also received $53,450 to develop a 15 to 20 minute training film for auto shop owners on how to establish and maintain sound environmental pollution prevention practices. Viewing of the film will be required as part of the city's auto shop

[12] EPA. "Pollution Prevention Offers Solutions in Environmental Justice Communities." *Pollution Prevention News* (April/May 1997). For more information on the EJP2 grants program, contact Chen Wen in the EPA Pollution Prevention Division at 202-260-4109.

permitting process. Other educational and outreach efforts related to automotive shops are being conducted by NEWMOA (the Northeast Waste Management Officials Association) and a joint collaboration of Roxbury Community College and the Tellus Institute in the Roxbury neighborhood of Boston.

- Dry cleaners are another small business concern with heavy minority ownership and environmental impacts in low-income neighborhoods. One EPA Region IX project focused on Korean-American dry cleaners who make up close to 70 percent of the industry in the greater Los Angeles area, and roughly 60 percent of the industry nationwide. The project brings together the Korean Youth & Community Center, UCLA's Pollution Prevention Education and Research Center, and Clean by Nature (Southern California's first 100 percent wet cleaning shop) to develop a wet cleaning outreach and education program.

- The EJP2 grant program offers the opportunity for more innovative approaches to environmental justice. For example, in EPA Region X, the Tulalip Tribes of Washington State received $196,614 to take a closer look at the competing demands of economic development and environmental protection, using sustainable development and pollution prevention as the focus. One outcome of the project will be a model Tribal Environmental Policy Act (TEPA) that tribes can use to review proposals for economic development near reservations. Another new approach funded through the grant program is a revolving fund operated by the National Association of Community Development Loan Funds (NACDLF) which represents 46 private, non-profit community development financial institutions that provide credit, capital, and technical assistance to support the revitalization of low-income rural, urban, and reservation-based communities across the United States. The fund will provide seed capital to several small community development organizations businesses, as well as providing training to its member institutions.

Adopting Environmental "Best Practices"

A large number of communities are undertaking pollution prevention activities as part of "best practice" environmental measures in areas ranging from water monitoring to leaf burning. Examples include:

- **Broward County, Florida, Department of Natural Resource Protection, in 1992, created the first pollution prevention best management practices program for marine facilities**. Boat repair and maintenance activities have the potential for contaminating surface and ground waters with discharges and runoff. Technical teams assessed the environmental impacts of the marine industry operations and worked closely with industry representatives to develop requirements and goals for all marinas. The goal was to encourage compliance with the Broward County Environmental Code. Workshops for all stakeholders were held and resulted in improved environmental regulation

compliance, enhanced waste minimization practices and a pollution prevention attitude in the marine industry.[13]

- **Lincoln-Lancaster County, Nebraska, has initiated two pollution prevention programs: The Wellhead Protection Project, and the Clean Community System.** The Wellhead Protection Project is funded through grants to identify village well recharge areas and potential sources of contamination to prevent future pollution. On-site farm pollution prevention assessments are being conducted in wellhead protection areas. The Clean Community System is taking a grassroots approach to educating citizens pollution prevention. The goal of the education displays and activities conducted at county and state fairs is to help citizens identify and prevent nonpoint source pollution. Volunteers are stenciling storm drains with "No Dumping" and "Goes to Stream" slogans.[14]

- **The St. Clair County Health Department, Illinois, in collaboration with the American Lung Association, Illinois Soil and Water Conservation District, Illinois Nurses Association, and area hospitals, is identifying alternatives to leaf burning and educating the public about sound leaf management** The City of O'Fallon, Illinois is using a vacuum to manage leaves and is demonstrating the process for other communities on leaf composting. Freeburg, Illinois, is using a small machine to mulch leaves as they are collected. The leaves will be used by farms. County firemen are assisting in educating students on the environmental and health problems associated with leaf burning.[15]

Preventing Pollution in the Indoor Environment

Most of us spend considerably more time indoors (either in our offices and in our homes) than we do outside; some studies have indicated that the average person spends as much as 90 percent of the day indoors. Because we spend so much time indoors, indoor air concentrations, even if uniformly lower than outdoor levels, make up a significant amount of our exposure every day. In fact, complaints about inadequate indoor air quality are escalating.

Indoor air pollution is especially important to those who work in professions that expose workers to chemicals such as formaldehyde, perchloroethylene, and solvents that can cause serious health concerns. The 1990 SAB report identified indoor air pollution as one of four environmental issues that represented major types of human exposure known to be associated with significant impacts on human health.

---

[13] *Preventing Pollution in Our Cities and Counties: A Compendium of Case Studies*. A joint publication of the National Association of County and City Health Officials, the National Association of Counties, the National Pollution Prevention Roundtable, the Municipal Waste Management Association, and the United States Conference of Mayors (Fall 1995).

[14] Ibid.

[15] Ibid.

Indoor pollution from such sources as tobacco smoke, radon, and asbestos, and exposure to toxic agents in consumer products (e.g. solvents, pesticides, formaldehyde) can cause cancer and a range of non-cancer health effects. Table 6-1 summarizes the major indoor pollutants, their sources, and their possible health effects.

At the federal level, the EPA's Office of Radiation and Indoor Air is responsible for developing policy and programs dedicated to reducing the risks associated with these pollutants. In addition, the Occupational Safety and Health Administration (OSHA) sets standards for occupational exposure to many of these pollutants. Beyond EPA and OSHA, each state has a department of natural resources, environment, or health which deals with indoor air pollution. In addition, some counties have their own pollution agencies focusing on this issue. In some cases, local communities start a program with the technical assistance and funds from the federal government and move on to develop their very successful programs. For example:

- **The Austin, Texas, Green Builder Program's roots were in Austin's Energy Star Program, which developed out of EPA's own Energy Star Program.** The Green Builder Program rates homes on their environmental soundness. For example, a highly rated home might include filtration systems that reduce particulates by 40-80 percent and better. In addition, houses would include a higher grade of plywood which reduces formaldehyde emissions. The rating system raises awareness of and promotes green building practices. Austin has devoted considerable resources to making this program a success, renting billboards to advertise the program and teaming up with Habitat for Humanity (the nation's fourth largest builder) to further raise the profile of the program.

- **Recently, the San Francisco Water Pollution Prevention Program became involved in preventing indoor pollution and published a prevention guide for businesses, "Managing a Less Toxic Building: Pollution Prevention Tips For Commercial Office Buildings.** The guide includes advice on chemical storage, water and energy conservation, and painting. While the focus of the guide is to prevent pollution in the public water system, many of the measures will decrease indoor pollution as well. For example, using latex paints whenever possible will reduce the need for paint thinners (latex paints do not require thinners or solvents for cleanup) and thus will help reduce organic gases found inside office buildings.

- **In Thurston County, Washington, citizens are receiving a Green Cleaning Consumer Education.** Local grocery stores promote awareness of least-toxic cleaning products via an interactive display set up for two weeks near the entrance of the participating store. Shoppers can also receive hand-on education through in-store tours that explain the least-toxic products and Green Cleaning Kits. The program also teams with local solid waste reduction and ground water programs.[16]

[16] Ibid.

Table 6-1. Indoor Air Pollutants

Pollutant	Sources	Possible Health Effects
Radon	Earth and rock beneath the home, water, and building materials.	No immediate symptoms. Estimated to well contribute to between 7,000 and 30,000 lung cancer deaths each year. Smokers are at a higher risk of developing radon-induced lung cancer.
Organic Gases	Household products including paints, paint strippers, and other solvents, cleansers stored fuels, hobby supplies.	Eye, nose, and throat irritation; headaches, loss of coordination, nausea, damage to liver, kidney, and central nervous system. Some and organics can cause cancer in animals, some are suspected or known to cause cancer in humans.
Formaldehyde	Pressed wood products (hardwood, plywood, paneling, particle board) and furniture made from these materials. Durable press drapes, other textiles, and glues.	Eye, nose, and throat irritation, wheezing and coughing; fatigue; skin rash; severe allergic reactions. May cause cancer. May also cause other effects listed under "organic gases."
Pesticides	Products used to kill household pests. Also products used on lawns and gardens that drift or are tracked inside the house.	Irritation to eye, nose, and throat; damage to central nervous system and kidney; increased risk of cancer.
Asbestos	Deteriorating, damaged, or disturbed insulation, fireproofing, acoustical materials, and floor tiles.	No immediate symptoms, but long-term risk of chest and abdominal cancers and lung diseases. Smokers are at higher risk of developing asbestos-induced lung cancer.
Lead	Lead-based paint, contaminated soil, dust, and drinking water.	Lead affects practically all systems within the body. Lead at high levels (above 80 micrograms per deciliter of blood) can cause convulsions, coma, and even death. Lower levels can adversely effect the nervous system, kidney, and blood cells.
Tobacco Smoke	Cigarette, pipe, and cigar smoking.	Eye, nose, and throat irritation; headaches; lung cancer; may contribute to heart disease. For children, an increased risk of lower respiratory tract infections and ear infections, asthma, and decreased lung function.
Carbon Monoxide	Unvented kerosene and gas space heaters, leaking chimneys and furnaces, gas water heaters, wood stoves, and fireplaces. Automobile exhaust from attached garages.	At low concentrations, fatigue in healthy people and chest pain in people with heart conditions. At higher concentrations, impaired vision and coordination, headaches dizziness; confusion, and nausea. Fatal at high concentrations.
Biological Contaminants	Include bacteria, molds, mildew, viruses, animal dander and cat saliva, mites, cockroaches, and pollen.	Allergic reactions and asthma. Infectious illnesses such as influenza, measles and dust chicken pox. Mold and mildew can release disease-causing toxins.

Source: EPA's Office of Radiation and Indoor Air

National Non-profit Organizations

National organizations play crucial roles in advancing pollution prevention. It has been a primary focus for some new organizations and a new role for many established groups. Activities include new collaborations, innovative approaches, research, and information sharing. Central to the efforts of these groups are the data made available via EPA's Toxics Release Inventory (TRI). Established by the Emergency Planning and Community Right-to-Know Act (EPCRA) in 1986, TRI contains data on chemicals released from manufacturing facilities in the United States, which provide communities and non-profit groups with a factual basis for negotiations with local industries on measures to reduce waste generation.[17]

Below are a few examples of the efforts of national non-profit groups in the area of pollution prevention:

- **The National Pollution Prevention Roundtable**(NPPR) is the largest membership organization in the United States dedicated solely to avoiding, eliminating, and reducing pollution at the source. Founded in 1985, the Roundtable membership consists of pollution prevention professionals at the state, local, and tribal government levels with affiliate members from private industry, non-profit organizations, trade associations, federal agencies, and academic institutions. The Roundtable sponsors twice yearly conferences on pollution prevention, which reach a wide audience, in addition to numerous workshops, maintenance of the NPPR Network, list serves, and a clearinghouse. In August 1995, the Roundtable co-sponsored the first National Tribal Pollution Prevention Conference held in Billings, Montana. Sixty-two tribes from 28 states and Canada attended the workshops and sessions, which provided insight into pollution prevention principles and methods.

Pollution prevention has also been a primary focus for several professional associations.

- **The American Institute for Pollution Prevention**(AIPP) occupies a unique niche in pollution prevention as an organization of organizations — its members represent 28 trade associations and professional societies across a broad spectrum of American industries and professions. Its mission includes information dissemination, technology transfer, promoting sound pollution prevention policies, and facilitating communications among industry, government, non-government organizations, and academia.

  When AIPP was founded in 1989, its original objective was to provide a forum to discuss the "hows" and "whys" of pollution prevention. AIPP has developed educational materials on pollution prevention for engineering curricula and financial analyses of pollution prevention projects, and recently expanded its efforts to improve information sharing and promote voluntary prevention programs, including *Climate Wise*.

[17] See the EPA chapter of this Report for a more detailed description of the TRI program.

- One seventh of the entire gross national product of the United States is taken up by health care products and services. **The National Association of Physicians for the Environment** (NAPE) was created to engage this massive institutional and individual professional healthcare apparatus in pollution prevention efforts, to promote the understanding that: "Pollution Prevention is Disease Prevention." NAPE focuses on both the health impacts of environment hazards, and the waste reduction and pollution prevention opportunities presented in hospitals and medical practices. NAPE has sponsored conferences on the health impacts of air pollution, and in collaboration with the National Wildlife Federation, has developed the *Physicians Green Office Guide*, and the guide *A Green Home is a Healthy Home* for the public.

Established government organizations, focused on local community initiatives, have found a new role in helping promote prevention among their membership groups.

- **The National Association of Counties** (NACo) is the only national organization that represents county governments. Established in 1935, NACo's goals are to improve county government, act as a liaison with other levels of government, present the county position on national issues, and assist counties in helping their citizens achieve a better quality of life.

- **The National Association of County and City Health Officials** (NACCHO) is a non-profit membership organization serving all 3,000 local health departments nationwide, in cities, counties, townships, and districts. NACCHO provides education, information, research, and technical assistance to local health departments. It facilitates partnerships among local, state, and federal agencies in order to promote and strengthen public health.

- Formally inaugurated in December 1996, the **Joint Center for Sustainable Communities** (JCSC) is sponsored by the National Association of Counties and the U.S. Conference of Mayors. The JCSC represents an effort by local elected officials to address shared and difficult problems associated with sustainability — many of them linked to pollution prevention. Much of the JCSC's work centers around providing conferences and workshops for members, providing a clearinghouse of information on prevention and sustainability, and planning demonstration projects.

- **The Center for Neighborhood Technology** works with other groups, both locally and nationally, to develop sound transportation policies for communities and the environment. Its Transportation and Air Quality Program seeks to reduce transportation demand through comprehensive transportation management and reinvesting in urban neighborhoods. Its activities include land use mapping and transit oriented design.[18]

[18] Center for Neighborhood Technology Internet Site. (http://www.cnt.org/tsp/tsphome.htm)

- **Renew America** is a national non-profit organization working to promote environmentally sustainable communities. The organization sponsors conferences and maintains a data base of over 1,600 successful environmental programs at the local level. The data base, referred to as the Environmental Success Index, is available in print or on-line at http://www.crest.org/renew_america. One important program area for the organization is natural resource conservation.

- **The Institute for Local Self-Reliance**(ILSR) helps communities throughout the United States and abroad reap the benefits of recycling. ILSR's advice and analysis link community waste management needs with economic development. The Institute analyzes local waste streams and develops successful procurement and recycling programs.

Prevention has been the occasion for established environmental groups to take on expanded and new roles in collaborative projects.

- The impetus for pollution prevention has often been provided by public interest groups, including the **Environmental Defense Fund**(EDF). A decade ago, EDF first petitioned EPA to regulate dioxin, the potent poison associated with Agent Orange and the evacuation of Times Beach, Missouri. Since then, EDF has been instrumental in developing incentives for more efficient energy use and reducing the creation of hazardous and solid waste and ozone depleting substances.

  This preventive approach is demonstrated through the Pollution Prevention Alliance (PPA) and the Great Printers Project. PPA unites EDF and more than 120 local, state, regional, and tribal environmental organization in the Great Lakes region to promote pollution prevention through collaborative workshops and local demonstration projects. The Great Printers Project seeks to influence factors, usually beyond the control of the average printing business, that can constrain business environmental decisions. It focuses on changing factors that lead the businesses away from preventing pollution at the source. The project especially targets regulatory requirements, customer demands, and access to technology and financial resources.

  For example, owners of print shops have been faced with as many as 46 separate federal reporting requirements that resulted in confusion and non-compliance. EDF worked with a team of Great Lakes regulatory and economic development agencies, EPA, state and federal technical assistance providers, printers, suppliers, and customers to build a consensus for a consolidated regulatory system that focuses on reducing hazardous and solid waste.

- The Pollution Prevention Pilot Project (4P) brings together experts from industry and the environmental community to learn how to save money at the facility level via pollution prevention. The 4P is lead by **The Natural Re-**

sources Defense Council, Amoco Petroleum, The Dow Chemical Company, Monsanto Company, Rayonier, and the New Jersey Department of Environmental Protection. The 4P members are working at two chemical manufacturing facilities — a Dow Chemical plant in La Porta, Texas, and a Monsanto plant in Pensacola, Florida. Creative ideas for addressing site-specific environmental concerns have already begun to show significant cost savings and environmental improvement. The 4P is hoping to identify the internal, external, and regulatory barriers that discourage facilities from implementing pollution prevention measures. The goal of the project is to develop a policy to spur the use of innovative economic and environmental ideas to achieve pollution prevention at industrial facilities. Both industry and environmental groups have recognized the advantages of a cooperative approach.[19]

- Some non-profit organizations focus on one particular media. **Clean Water Action** and **Groundwater Guardian** are two such organizations — both focusing on protection of the nation's waterways. Clean Water Action is a national grassroots organization that educates citizens on issues affecting their communities and urges them to actively participate in the political process to affect change on environmental issues. While pollution prevention is not the group's only focus, it is an important aspect of its education and outreach efforts. The Groundwater Guardian program supports, recognizes, and connects communities for the protection their groundwater. The program is community driven and process oriented. Once again, pollution prevention is an important aspect of the program, along with monitoring activities.

The TRI has helped non-profit organizations promote prevention by providing information to communities.

- **OMB/Watch** (the Office of Management and Budget) is a non-profit group that advocates the public's right-to-know and greater government accountability. OMB/Watch and the **Unison Institute**, a center for computer systems and software technology in the public interest, operate the Right-to-Know Network (RTK NET), a free online computer telecommunications system that provides access to the latest national data bases including thecomplete TRI data bases. RTK NET is currently funded by several EPA program offices, with additional funding by other federal agencies and private foundations.

  Thirteen national environmental data bases are currently available on RTK NET and are integrated into a single master data base to support cross indexing and multimedia research. Four of the more important data bases related to pollution prevention are the following:

[19] President's Council on Sustainable Development. Council Report. Washington, DC (1995). The Report is available on the Internet at http://www.whitehouse.gov/WH/EOP/pcsd.

- BRS (Biennial Reporting System)
- CUS (TSCA Inventory of Chemical Production Data Base)
- TRI (Toxics Release Inventory)
- ROADMAPS (health information regarding TRI chemicals)

Users can access RTK NET by modem or via the Internet (http://www.rtk.net).

- **The Working Group on Community Right-to-Know** is a coalition of local, state, and national environmental groups concerned with the public's right-to-know about hidden chemical hazards and toxic pollution. The coalition is committed to public education and outreach in the areas of pollution prevention, chemical accident prevention, and information reform.[20]

- **INFORM**, founded in 1974, is a non-profit environmental research organization that seeks practical solutions to problems in chemical hazard prevention, solid waste management, alternative vehicle fuels, and agricultural water conservation. Through its reports, testimony, and other efforts, INFORM has been promoting source reduction to governments and industry since 1982. For example, INFORM developed several research documents and guides for citizens concerned about hazardous waste. *Preventing Industrial Toxic Hazards: A Guide for Communities* introduces the concepts behind pollution prevention, summarizes applicable laws, and explains how communities can find out about emissions from local industrial facilities.[21]

  Today, INFORM's research has broadened to study not only the processes employed to manufacture products, but also chemical use and product design.

  INFORM not only identifies pollution prevention possbilities for others, it also integrates the concept into its own operations. INFORM has turned its own office into a "green space," using an interior design strategy that includes open design, energy efficient lighting, insulated duct work, and less toxic materials. In cooperation with architects Croxton Collaborative and building owner Silverstein Properties, INFORM renovated its new office space for $38 per square foot, 27 percent less than conventional office construction costs in New York City, where it is located. The new office was not only more cost effective to renovate, but will also save money over the lifetime of the building.[22]

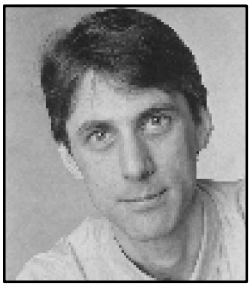
Communities and non-profit organizations are often left out of the pollution prevention equation, but unjustifiably so. National non-profit organizations have been instrumental in introducing many environmental concepts, including pollution prevention, to the public and are leading advocates for change at the local, state, federal, and

[20] Interview with Paul Orum, Working Group for Community Right to Know (May 1995).

[21] Interview with Mia Fienemann, INFORM (May 1995).

[22] "Building Design," *Pollution Prevention News* (July-August 1995).

global levels. Many community-based organizations have spearheaded progress in environmental justice and right-to-know legislation. Communities facing previously intractable issues of transportation, land use, economic development, and environmental justice are finding that pollution prevention offers an array of solutions that tackle the problems at their source. This chapter has highlighted several local initiatives for affecting change that demonstrate both the vitality of the organizations involved and the multiplicity of pollution prevention opportunities and challenges.



Public Information for Pollution Prevention

by
Paul Orum
Working Group on Community Right-to-Know
Washington, DC

To prevent pollution, people need adequate information. With adequate information, communities can demand accountability from industry and government. Pollution prevention requires well-informed interactions at many levels of society. But while information to track and promote prevention should underlie all of these interactions, for the most part, it doesn't. Without basic chemical use and emissions information, we cannot expect to see much pollution prevention.

EPA information doesn't include most pollution sources. It doesn't provide a full picture of accidental releases. It doesn't usually show *why* pollution occurs or what technological alternatives exist. It doesn't indicate the health hazards of most chemicals. And it doesn't enable people to readily form environmental profiles of industrial facilities.

Different pollution control laws regulate different chemicals; use different units of measure; cover different sets of facilities; address different environmental media; span different reporting periods; inform different government offices; and, store information in different files and computers with different rules for public access. As a result, both regulators and the public make uninformed decisions.

Many environmental laws recognize the value of public participation. Non-profit groups serve as catalysts, they spotlight problems and propose solutions. Citizens have a legitimate and productive role to play. Public disclosure of Toxics Release Inventory (TRI) data, for example, has encouraged considerable pollution prevention and control. More complete information would extend similar benefits across the board, bringing in more communities, companies, and activities.

Of course providing information does not by itself assure progress in pollution prevention. Many other factors are more limiting than the lack of information. These include feelings of fear and powerlessness in communities; lack of organizational and institutional support, and opposition from pollution control and chemical manufacturing industries. To stimulate prevention, people need well-organized communities, reliable information, technical assistance, appropriate opportunities to intervene, sound definitions, and most importantly, support from the entire regulatory system. Below are three types of prevention information that can help fill the gaps.

1) People need basic prevention information Ten years ago, the Office of Technology Assessment reported that data collected under pollution control laws did little to help companies assess where and why they generate toxic waste. The information was incomplete, inconsistent, and inaccessible. Separate systems created information barriers within firms as well as government. In various ways these laws encouraged costly pollution control rather than prevention. Unfortunately, basic information for prevention remains limited today.

The 1986 TRI law gave many communities ready access for the first time to pollution data from corporate files and computers. The 1990 Pollution Prevention Act added how much waste TRI companies burn, treat, and recycle. More source reduction means less toxic waste, less worker and community exposure, and less potential for

contamination. For example, hazardous waste recycling is associated with over 100 Superfund sites. But TRI remains limited, and EPA is adding more chemicals, industries, and materials accounting data for prevention. Materials accounting tracks the basic flow of chemicals through the facility and helps reveal prevention opportunities.

Advocates have presented a long list of advantages provided by such data. A basic materials accounting helps people to: tell where chemicals go (as waste or in product); identify low cost prevention opportunities; measure chemical use; conduct full cost accounting; conduct life cycle assessment; form a baseline for planning; validate emissions data; improve public understanding; improve chemical management capacity; assess worker exposure; establish formal employee prevention programs; encourage technology transfer; and obtain the "whole picture information" needed for pollution prevention. All of these activities require effective interactions between well-informed people. Expanding TRI is just a start.

2) People need integrated information Information collected under environmental laws is disjointed. Separate laws enacted over the past 25 years cover different environmental media, standards, and programs. As a result, EPA cannot readily profile a facility's environmental performance or link data across more than a dozen program offices -- despite spending over $300 million each year on environmental information.

Many people see Internet access to environmental data as a new frontier of activism. However, such access also transfers the underlying problems of disjointed single-media information to a broader public. To integrate the underlying information, EPA is adopting common sense elements called "key identifiers" that enable people to obtain information from across EPA's data collections. Common key identifiers and examples of their application are:

a) A community group easily finds out what environmental information a local factory reports (facility ID number).

b) A student maps community pollution sites, populations, and sensitive environments on a home computer (accurate latitude and longitude).

c) A company environmental manager readily determines what regulatory requirements govern the use of a particular chemical (regulated substance).

d) A state prevention program locates cleaner technologies for a particular industry through an EPA clearinghouse (industrial sector, SIC code).

e) An emergency responder identifies local firms that use a dangerous chemical and assesses where it would go if accidentally released (chemical name and CAS number).

f) A citizens' group quickly finds out if a firm has been a "bad neighbor" or "good neighbor" at its operations elsewhere (parent company tax ID number).

With these and other identifiers, people can also link toxicological data, worker and public health data sets and registries, local human resources organizations, and other community health information. Integrating information around key identifiers will also help EPA to unify permitting, inspections, training, and reporting -- critical steps for pollution prevention. However, more is needed.

3) People need information on solutions, not just more study of problems. Risk information alone provides a poor basis to address environmental problems and form public partnerships. Risk assessments study *prob-*

lems, but people also need information on technological alternatives -- on *solutions*. These approaches require different skills, methods, and resources. Too often, risk assessments become experts' debates in which uncertainties turn into political opportunities for delay. Not surprisingly, many efforts to roll back environmental laws have revolved around risk assessment. Yet too few environmental laws produce useful information on solutions. For example, new EPA regulations require companies to disclose potential spills, fires, and explosions as part of larger Risk Management Plans. However, EPA did not require firms to assess inherently safer technologies that reduce or eliminate hazards.

Additional information barriers limit prevention. Independent expert oversight and public reports on chemical accidents are fundamental to community right-to-know, but without funding for the National Chemical Safety Board, communities are not getting this information. People need health and safety information on chemicals, but trade secret claims impede access to Toxic Substances Control Act data. People need information to enforce pollution laws, but proposed Clean Air Act monitoring won't enable people to track compliance. People need an environment that supports technology transfer, but audit privilege laws in some states impede the free flow of information on prevention technologies. Consumers need information on chemicals in products, but pesticide product labels fail to honor the public's right-to-know. Directly or indirectly, all of these information barriers impede prevention.

Efforts to roll back environmental laws consistently target public information on environmental hazards and compliance. By restricting information, these efforts would limit the interactions needed at all levels of society to prevent pollution. Yet these rollbacks, if successful, can only increase public demands to hold government and industry accountable. Rather than rollbacks, we need to start with full disclosure.

Community Challenges

by
Mary Rosso
President
Maryland Waste Coalition
Glen Burnie, Maryland

In my opinion, the biggest challenges that communities face in promoting local pollution prevention can be summed up in two words. They are: RESOURCES and EDUCATION. The communities need both of these if they are to implement any program aimed at pollution prevention, waste reduction, safe alternatives, etc. I am enthusiastic about EPA's efforts to promote community-based environmental protection because it has never been done before on a large scale, and certainly not done in a "hands on" manner in the heart of the community. The only way a good program can succeed is if all parties (local, state, and federal) participate so that all entities are operating at the same time, providing non-conflicting information. Here, at the Maryland Waste Coalition, we strive to achieve such uniform participation.

In 1980, with a grant from the Environmental Protection Agency, the Maryland Waste Coalition was created to educate local communities about hazardous waste issues. Since that time, the Coalition has continued as a volunteer organization, and has expanded its focus to include all environmental issues. We are still heavily involved with community environmental issues, and operate at the local, state, and federal level. For example, we are actively involved in EPA's Project XL. In addition to community education, the coalition works directly with industry. I have been involved with the coalition since its inception, and have watched our partnership roles with industry evolve from adversarial to cooperative. We act as a watchdog group, supporting pollution prevention legislation, and being involved with regulatory noncompliance by industry, but also assisting "good neighbors" with expediting their permitting.

The Coalition is currently working on a new partnership program in the Baltimore City/Anne Arundel County corridor that will involve the Federal, state, and local governments. This area is heavily populated by the chemical industry, so waste disposal issues such as incinerators, landfills and Superfund sites are a high priority. It is too early to tell how effective the new program will be, but it has gotten off to an exciting start. We had a great kick-off meeting in August 1996, with over 170 people, including representatives from at least 50 industries, attending. Out of those 170, 49 participants agreed to work on committees.

We are now breaking into sub-committees that will accumulate information and start implementing priority concerns. These concerns address the major problems we feel can be reasonably worked on provided that EPA, the Maryland Department of the Environment, and local governments help us with the factual data and give us guidance in its proper use. These subcommittees will address a wide variety of environmental issues such as: 1) health effects; 2) air quality; 3) stormwater management, parks, recreation, and open spaces water quality (including NPDES permits); 4) economics and the environment; and 5) housing and trash cleanup. These subcommittees will be headed by co-chairs, one representing the local community, and one representing industry.

In the future, we hope that EPA and other government and non-government organizations can assist the Coalition. Assistance can take the form of grants or technical assistance such as expertise in areas such as permitting. With access to knowledgeable scientists and regulatory experts, the Maryland Waste Coalition can help make the Maryland environment better for us all.

Local Government: An Important Pollution Prevention Partner

by
Naomi Friedman
Project Coordinator for Solid Waste and Pollution Prevention Projects
National Association of Counties
Washington, DC

and

Karen Troccoli, MPH
Project Manager for Environmental Health Programs and Policies
National Association of County and City Health Officials
Washington, DC

During the past several years, an important change has taken place in national strategies to protect the environment and human health. By increasing the efficiency with which we use raw materials and by substituting benign products for more hazardous ones, we have demonstrated success in preventing or reducing pollutants that infiltrate our air, water, and land. This trend toward front-end, pollution prevention strategies has been promoted not only by federal and state governments and a growing number of businesses, but by local governments as well. Indeed, because of their unique position in the community, local governments have been able to spur pollution prevention activities that otherwise may not have been possible.

Historically, citizens' expectations for a clean and healthy community have been met through basic services, including clean-up, treatment, and disposal, provided by local government. Although diminishing resources, coupled with increasing mandates, threaten to leave communities with little time for innovative, voluntary prevention efforts, local pollution prevention initiatives continue to flourish. Cities, counties, towns, and townships are finding that pollution prevention is a fundamental and less costly way to protect the environment and public health.

Strengths of the Community-based Approach

Implementing pollution prevention programs at the local level makes sense for many reasons. Local government is on the "front line" where the impact of pollution on neighborhoods and the people who live in them is most apparent. Local agencies are notified first when a local environmental problem is detected. If a drinking water supply shows an elevated level of a pollutant, it is the local health department that is barraged by calls of inquiry and concern. When an illegal dump site is discovered, residents will report the problem to the local law enforcement agency, the department of public works, or their local elected officials. And, when a household fails to receive collection of trash or recyclables on the designated day, residents will call their city or county government to complain. As a result, local governments are highly motivated to reduce the environmental problems to which their residents are exposed and ensure the long term safety of their community.

The physical proximity of local government to citizens and businesses makes them an ideal disseminator of pollution prevention information. Local officials, such as sewage pretreatment inspectors, fire inspectors, permitting and licensing officers, health officials, zoning and planning board members, and economic development officers interface with the community on a routine basis. Pollution prevention education can be incorporated into these responsibilities. Moreover, in their capacity as building owners and managers, fleet operators, and procurement agents, city and county governments can incorporate prevention and conservation techniques into internal operations and serve as models to the community.

Because pollution prevention spans the domain of diverse agencies and segments of the community, most local pollution prevention efforts are collaborative in nature. Numerous agencies are involved in these efforts, ranging from the local health department to the department of public works. Another incentive for cooperation is limited resources -- funding to hire "pollution prevention staff" is uncommon, forcing counties and cities to shift existing staff within health departments, public works divisions, environmental compliance bureaus, solid waste offices, economic development offices, and/or general administrative offices into pollution prevention roles. Although a few communities have managed to secure additional funds to support a coordinator to oversee community-wide projects, most of them try to incorporate the pollution prevention ethic into existing city/county programs.

Local health departments have played a particularly important role in initiating and/or maintaining pollution prevention programs. Local health departments have historically focused on primary prevention in their ongoing efforts to protect the public from risks of exposures to harmful substances and maintaining clean and safe air, water, and facilities. These are also the essential elements of pollution prevention.

On the local level, there are not only increased opportunities for agencies to integrate functionsand form partnerships, there is a great opportunity for government to form partnerships with private organizations, such as universities, trade organizations, chambers of commerce, community groups, and other entities with a common interest in pollution prevention. Such collaborations benefit all participants because they increase exposure, build credibility, and provide a forum for sharing ideas.

Pollution Prevention on the Front Lines

In recent years, cities and counties have stepped forward as leaders in pollution prevention and their efforts are gaining attention. These pioneering communities, such as Dade County, Florida; Newark, New Jersey; Cincinnati, Ohio; Santa Clara County, California; Erie County, New York; Thurston County, Washington; San Diego, California; and Olmsted County, Minnesota, span the country, representing urban, suburban, and rural locales. Collectively, these communities have provided thousands of businesses, households, and civic organizations with pollution prevention information and technical assistance.

Many local governments' pollution prevention programs focus on delivering information on process efficiencies, material substitutions, and best management practices to small and medium sized companies. Local agencies target community businesses that use or emit chemicals that are a particular problem in the locality or region, that are in noncompliance with environmental regulations, and/or that are receptive to new and innovative ideas. These industries typically include: automotive repair and refinishing; print shops; the construction and building industry; photography finishers; and dry cleaners. Some communities put a specific local twist on their programs, such as Broward County, Florida, which is educating the marina and boating industry about best management practices; and Phoenix, Arizona, which has targeted dentists to reduce mercury discharges into the wastewater treatment facility.

City and county governments deliver pollution prevention information to the community using a variety of local networks including: the local press, pollution prevention workshops or seminars, pollution prevention mailings, hand-delivered information to targeted companies, and on-site pollution prevention audits. Although pollution prevention techniques may ultimately help a business meet environmental requirements, communities generally keep participation in these efforts voluntary, as businesses are more comfortable sharing information with government officials when the relationship is nonregulatory. Some communities, however, have made pollution prevention requirements part of an enforcement or consent agreement.

Some municipalities and counties have chosen to focus prevention efforts on nonpoint sources of pollution by helping residents better maintain septic systems and reducing urban run-off to delicate watersheds, while other local governments have examined their own purchasing habits and use of hazardous chemicals and have targeted internal operations for pollution prevention. Local agencies also target consumers with education campaigns that stress the importance of product substitution and household hazardous waste usage and disposal issues.

Expanding Local Government's Role in Pollution Prevention

Local governments have demonstrated considerable success in incorporating pollution prevention into their community initiatives. They have documented significant dollar savings and tonnages of pollution avoided as a result of businesses adopting recommended pollution prevention strategies. Many counties and cities have also implemented innovative public education campaigns that have helped citizens, businesses, and organizations to understand why and how they can take steps to reduce the amount of waste they generate. Finally, local health departments are making great strides in advocating the importance of pollution prevention in regard to its connection to human health.

Despite these successes, it is clear that local government could do even more, given adequate support -- namely, monetary support, technical support, and political support. State and/or federal funding has enabled many communities to launch programs they otherwise would not have been able to undertake. The infusion of seed money encourages local officials to take more program risks and justifies implementation of pollution prevention efforts that are not required by federal or state law. In many cases, pilot initiatives become self-sustaining and an integral part of a community's environmental and public health programs. County and city agencies have made the most of existing funds by incorporating pollution prevention into ongoing activities and forming partnerships with other organizations to consolidate efforts and leverage additional funding. However, increased availability of federal and state funds for local governments' pollution prevention activities is needed.

Communities also report that technical support and encouragement from the federal and state government spurred their interest in pollution prevention. Larimer County, Colorado, in the report of its Pollution Prevention Technical Advisory Group, states, "although federal and state government assert the importance of pollution prevention, local government and businesses lack the information and assistance necessary to make the transition from traditional, end-of-pipe environmental protection mechanisms to pollution prevention." Local governments need informational materials such as fact sheets, fliers, and brochures for citizens and businesses. They also can use model ordinances and examples of pollution prevention strategies that have been effective in other communities. While localities often depend upon federal and state agencies for these materials, networks of local agencies working on pollution prevention, such as the Local Government Workgroup of the National Pollution Prevention Roundtable, and associations with whom communities have a trusting relationship, provide effective forums for

the exchange of information, partnership development, and other technical support. For example, our two organizations, with funding from the U.S. EPA, and in collaboration with the U.S. Conference of Mayors and the National Pollution Prevention Roundtable, recently published a compendium of 19 model city and county pollution prevention programs that has been widely distributed throughout the country.

Garnering political support within the community for pollution prevention is important, given the competing priorities that challenge local policy makers. Pollution prevention, like other preventive measures, is a long-term investment. That means elected officials may not witness the benefits of a pollution prevention initiative within their political term. For these reasons, policy makers need additional support and encouragement to make pollution prevention a priority. The more that pollution prevention is promoted by the federal government, stategovernment, private organizations and citizens, the more likely it is that local policy makers will join the bandwagon and support such initiatives in their communities.

With the unique responsibilities of setting local policies, encouraging local development and protecting the public's health, local government is positioned to play a critical role in pollution prevention. Increasing devolution of responsibility from the federal to the state and local level, and greater regulatory flexibility, means greater opportunities for local governments to take on leadership roles and invest in pollution prevention efforts that will help achieve better environmental protection results for their communities. Local government has been a crucial force in creating the momentum around pollution prevention and it promises to build on that momentum and on its own accomplishments in the years to come.